

Citizen Science as a Collaboration Tool: Meeting Public Needs and Land Management Objectives



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NOAA Ocean Exploration Advisory Board Mtg 12/04/19

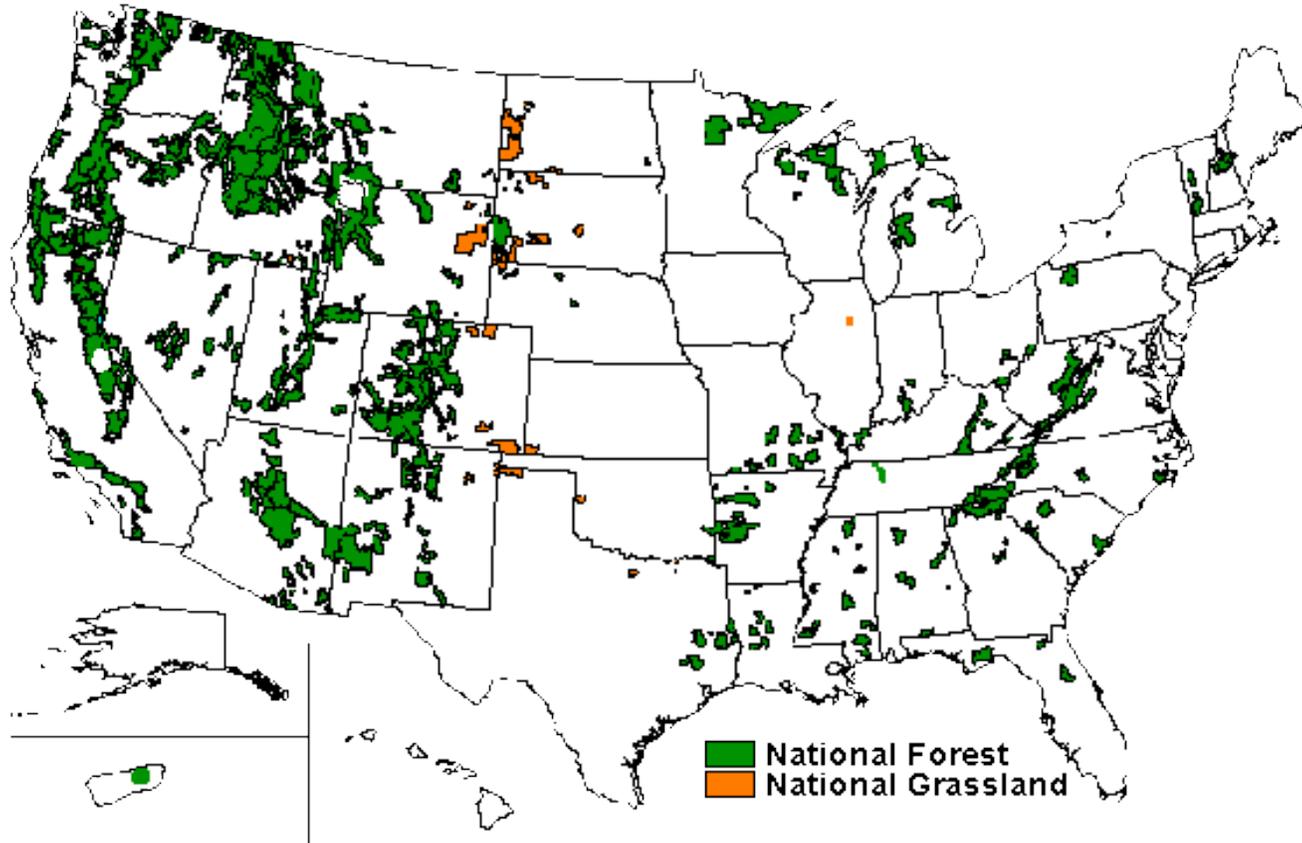


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FOREST SERVICE



Manage public lands

- 193 million acres of national forests and grasslands

Diverse stakeholders:

- Recreation & tourism
- Wildlife conservation
- Cultural resource preservation
- Timber production
- Fire resiliency
- Urban forestry

Map of lands managed by the Forest Service.



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GROWING NEEDS, LESS CAPACITY



FOREST SERVICE MANDATE

- Foster resilient, adaptive ecosystems
- Deliver benefits to the public
- Connect people to the outdoors
- Advance knowledge
- Exchange natural resource expertise

CAPACITY

- This requires inventory, monitoring and research data and information.
- Budget and staff time are increasingly limited

Forest Service personnel and members of the Boise Forest Coalition visit a site on the Boise National Forest in Idaho. 2018 Cohort.



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2017 CROWDSOURCING & CITIZEN SCIENCE ACT

// Granting Federal science agencies the direct, explicit authority to use crowdsourcing and citizen science will encourage its appropriate use...and facilitate broader public participation in the innovation process... //



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Citizen Science Competitive Funding Program



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INVEST IN COLLABORATIVE SCIENCE

GOALS OF THE CITSCI FUND:

- Expand and strengthen the practice of citizen science in agency programs.
- Advance science and resource management through sound project design.
- Stimulate partnerships that address mutually beneficial outcomes, expand capacity, and leverage expertise and resources.
- Provide opportunities for meaningful participation by the public in agency activities.
- Offer opportunities for peer-to-peer learning for agency and partners.



Volunteers in Colorado with 2018 Cohort project, "Engaging citizen scientists in field research on American pika, an indicator species for alpine ecosystem integrity".



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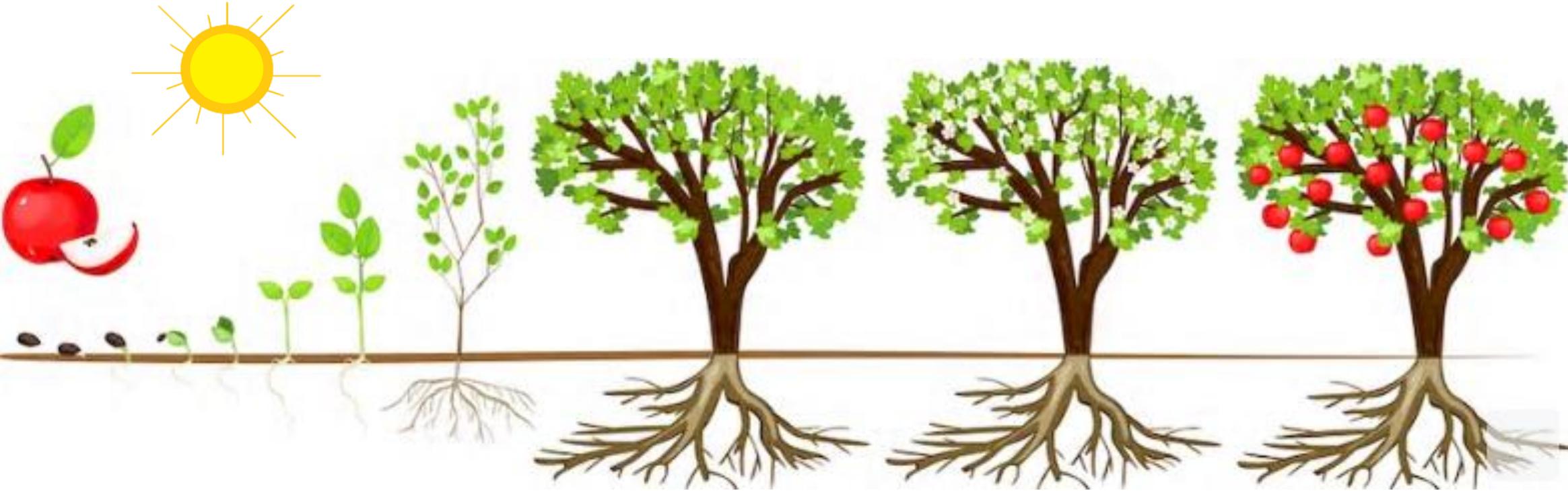
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ELIGIBILITY CRITERIA

- Open to all Forest Service & partners
- Each project must have a USFS Partner Lead and a Partner Project Lead with a partnership agreement ready to be put into place upon receipt of award
- Have a genuine scientific and/or management outcome
- Meet a Forest Service information need
- Demonstrate meaningful volunteer engagement/collaboration
- Can be on any subject area (biological, social, cultural, infrastructure, etc.)
- Duration of one year or longer, involving volunteers multiple times over the course of the project



PROJECT INCUBATOR



Phase 1
Ideation and Design

→ Phase 2
Implementation

→ Phase 3
Ongoing Implementation and Knowledge Transfer



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LEARNING FROM EACH OTHER

Call Topic	Target Date
Welcome and introductions with project leads by Coaches	May 2019
Kick-Off Call	June 2019
Reporting training	August 2019
Show-and-tell	November 2019
Preparing for field season and volunteer recruitment	February
Report-out Ideation Projects	June/July 2020
Project evaluation training/workshop	September 2020
Report-out Project Development and Ongoing Projects	November/December 2020



CITIZEN SCIENCE TOOLKIT

PROJECT PLANNING GUIDE

<https://www.fs.fed.us/working-with-us/citizen-science/citizen-science-toolkit>

DETERMINE IF IT'S RIGHT FOR YOUR PROJECT

START WITH THE BASICS

BUILD YOUR TEAM

ESTABLISH PROJECT DESIGN

PREPARE FOR VOLUNTEERS

DEVELOP PROJECT EVALUATION

SHARE RESULTS



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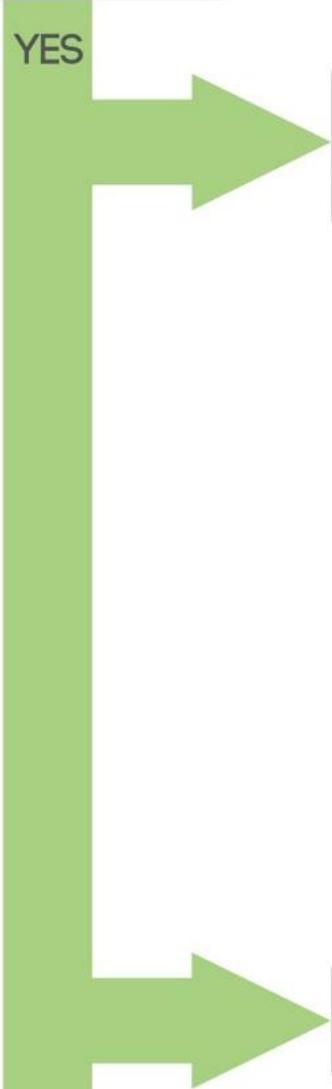


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Does the agreement include the exchange or expenditure of something of value (for example, funds or services?)



Memorandum of Understanding
(non-binding agreement)



Does the FS procure goods and/or services for the direct benefit of the agency?

With a private vendor?

Contract
(non-FSM 1580)

With another Federal agency?

Interagency Agreement
(outgoing funds)

With a college for research supplies or services?

Cost Reimbursable Agreement

Does the project cover one of the following?
1) Pollution abatement
2) Manpower/job training
3) Publication of forestry history materials
4) Interpretive associations
5) Forest protection
6) Prescribed fire
7) Watershed restoration and enhancement

Participating Agreement

Is there a mutual benefit, mutual interest, and/or cost sharing?

Will the FS cooperatively develop, plan, and implement a project with a cooperator that is mutually beneficial and enhances FS activities?

Challenge Cost Share Agreement



POTENTIAL RETURN ON INVESTMENT



Forest Service Funds	\$127, 216
Partner Funds	\$106,896
1,300 volunteers*	\$641,940

Return on Investment = 6 to 1!

*Estimated number of volunteers in proposals with an estimated volunteer time of 20 hours per individual participant. Dollar value calculated using [Independent Sector Estimated National Value of Each Volunteer Hour](#). These are estimates, not final values.



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TWO STAKEHOLDER CASE STUDIES



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CULTURAL IMPORTANCE

**Survey of plants
traditionally
used by Arizona
tribes to improve
management
across 4FRI**

*Apache-Sitgreaves,
Coconino, Kaibab,
and Tonto National
Forests
Central Arizona*

PARTNERS

- Arizona and New Mexico tribes, Northern Arizona University, Forest Service Tribal Liaisons and Botanists

VOLUNTEERS

- Tribal elders and youth, at-risk youth, underserved communities, Tribal communities, natural resource partners, Forest Service silviculturists



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“WE ARE NEIGHBORS”



4FRI = 2.4 million acres

Across NM and AZ:

- 11 National Forests, 20 mil acres
- 51 federally recognized tribes, 20 mil acres
- 637 miles of shared land boundary

“Anything that happens on the Forest Service side has an effect to Tribal lands and vice versa.”



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CULTURALLY, MEDICINALLY, ECONOMICALLY IMPORTANT PLANTS



“The tribes continually emphasize plant resources that are incredibly important to them, but most [Forest Service] funding and time go to threatened, endangered and sensitive species.”



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ECOLOGICAL KNOWLEDGE → RESTORATION PROTOCOLS



Tribal Nations Botanical Research Collaborative

About

Members 5

This Forest Service Citizen Science program collects information on traditionally used plants that have cultural, medicinal, or economic values important to tribal communities. Volunteers will record observations of these plants using the iNaturalist app on their cellular phones; data

[Read More](#)

NEWS

Overview

686
OBSERVATIONS

34
SPECIES

131
IDENTIFIERS

229
OBSERVERS

Stats



RECREATION NEEDS

Cache Creek Study: Monitoring a heavily used recreation area

*Bridger-Teton National
Forest
Jackson, WY*

PARTNERS

- Jackson Hole Wildlife Foundation, Wildflower Watch, and Friends of Pathways, Forest Service Recreation Lead

VOLUNTEERS

- Outdoor recreationists, Teton County Middle School, Teton Science School, the Teton Chapter of the Native Plants Society, Teton Botanical Garden, and the Sierra Club



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A GROWING COMMUNITY



“Jackson is a quintessential mountain town, experiencing growth like a lot of towns in the West. Grappling with managing growth and maintaining open space.”



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RECREATION VS. WILDLIFE



“In the Jackson town survey, maintaining wildlife populations always comes up as a priority value. At the same time, we have a blossoming recreation community of mountain bikers, dog walkers, runners - and the reason people are moving here is because of the access out their back door.”



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BUILDING CONSENSUS IN A COMMUNITY



“People are polarized, we need a place to start the conversation.”

CREATING A DATA BASELINE

- Trail counters
- Wildlife movements
- Phenological observations ten species of native and invasive plants



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ARE WE ACHIEVING WHAT WE SET OUT TO?

PROGRAM REPORT COMING 2020

- **Inspire & Promote Citizen Science**
- **Demonstrate Mission Results**
 - Increased collection & analysis of usable data & information
 - Enhanced collaboration between units, partners & public
- **Model a Project Incubator**
 - Accelerate project growth and success through peer-to-peer learning



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MORE INFORMATION

Citizen Science Toolkit: <https://www.fs.fed.us/working-with-us/citizen-science/citizen-science-toolkit>

CitSci Fund Webpage: <https://www.fs.fed.us/working-with-us/citizen-science/competitive-funding-program>

Mailing list sign-up: www.eepurl.com/c5H8db

Email Us! sm.fs.fscs@usda.gov